



Oregon

John A. Kitzhaber, MD, Governor

Water Resources Department

North Mall Office Building

725 Summer Street NE, Suite A

Salem, OR 97301-1271

503-986-0900

FAX 503-986-0904

April 6, 2012

CRYSTAL CLEAR ENERGY LLC
ATTENTION: CHUCK KELLEY
220 NORTH G ST
LAKEVIEW, OR 97630

Reference: File G-17512

Dear Applicant:

**THIS IS NOT A PERMIT AND IS
SUBJECT TO CHANGE AT THE NEXT PHASE OF PROCESSING.**

This letter is to inform you of the preliminary analysis of your water-use permit application and to describe your options. In determining whether an application may be approved, the Department must consider the factors listed below, all of which must be favorable to the proposed use if it is to be allowed. Based on the information you have supplied, the Water Resources Department has made the following preliminary determinations:

Initial Review Determinations:

1. The application proposed the appropriation of 1500 gallons per minute, or 3.34 cubic feet per second (CFS), from production well Hammersley Well (LAKE 2326) in Hammersley Creek Basin for year-round industrial use (geothermal heating & cooling) and power development.

The water for industrial use (geothermal heating & cooling) and power development will be injected into up to three proposed injection wells, Well 2, Well 3, and Well 4, and the use will be non-consumptive.

2. The proposed use is not prohibited by law or rule except where otherwise noted below.
3. The appropriation of water from Hammersley Well (LAKE 2326) for year-round industrial use (geothermal heating & cooling) and power development is allowable under the Goose & Summer Lake Basin Program.
4. Ground water will likely be available within the capacity of the resource, and if properly conditioned, the proposed use of ground water will avoid injury to existing ground water rights.

The Department has determined, based upon OAR 690-009, that the proposed ground water use will not have the potential for substantial interference with any surface water source.

5. The east coordinate for proposed injection Well 4, located in SENW of Section 10, Township 39 South, Range 20 East, W.M., appears to be incorrect based on the location of the well. The Department estimates the coordinate is closer to 2020 feet east, rather than 202 feet east from the NW corner of Section 10.

Please provide a revised map of the coordinate and/or the well location by Thursday, May 10, 2012. If you need additional time, you may send a written request for up to 180 days. **If we do not receive clarification and/or a revised map or a hold request by this date, the Department may proceed with a Proposed Final Order recommending denial of the application.**

Summary of Initial Determinations

The appropriation of 3.34 CFS from Hammersley Well (LAKE 2326) in Hammersly Creek Basin for year-round industrial use (geothermal heating & cooling) and power development is allowable.

Because of these favorable determinations, the Department can now move your application to the next phase of the water-rights application review process, where public interest factors will be evaluated.

Please reference the application number when sending any correspondence regarding the conclusions of this initial review. Comments received within the comment period will be evaluated at the next phase of the process.

To Proceed With Your Application:

If you choose to proceed with your application, you do not have to notify the Department. Your application will automatically be placed on the Department's Public Notice to allow others the opportunity to comment. After the comment period the Department will complete a public interest review and issue a Proposed Final Order.

Withdrawal Refunds:

If you choose not to proceed, you may withdraw your application and receive a refund (minus a \$200 processing charge per application). To accomplish this you must notify the Department in writing by **Friday, April 20, 2012**. For your convenience you may use the enclosed "STOP PROCESSING" form.

If A Permit Is Issued It Will Likely Include The Following Conditions:

1. Measurement, recording and reporting conditions:
 - A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each production well and each injection well, which shall be located within 50 feet of the wellhead.
 - B. Adjacent to each totalizing flow meter shall be a clearly visible monument with a sign noting the flow meter.
 - C. The permittee shall maintain the totalizing flow meters in good working order.

- D. The permittee shall record monthly readings at each totalizing flow meter, and shall submit a report which includes the recorded amounts to the Department annually or more frequently as may be required by the Director. Further, the Director may require the permittee to report general water-use information, including the place and nature of use of water under the permit.
 - E. The permittee shall allow the watermaster access to the totalizing flow meters; provided however, where any meter is located within a private structure, the watermaster shall request access upon reasonable notice.
 - F. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.
2. If substantial interference with a senior water right occurs due to withdrawal of water from any well listed on this permit, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal shall be regulated until or unless the Department approves or implements an alternative administrative action to mitigate the interference. The Department encourages junior and senior appropriators to jointly develop plans to mitigate interferences.
 3. If the number, location, source, or construction of any well deviates from that proposed in the permit application or required by permit conditions, this permit may be subject to cancellation, unless the Department authorizes the change in writing.
 4. Prior to use of water under this permit, the permit holder must register the injection activity with the Oregon Department of Environmental Quality's Underground Injection Control Program, which can be contacted at 2020 SW 4th Ave, Ste 400, Portland OR 97201, or 503-229-5263.
 5. The Department requires the water user to obtain, from a qualified individual (see below), and report annual static water levels for each well on the permit. The static water level shall be measured in the month of March. Reports shall be submitted to the Department within 30 days of measurement.

The permittee shall report an initial March static water-level measurement once well construction is complete and annual measurements thereafter. Annual measurements are required whether or not the well is used. The first annual measurement will establish a reference level against which future measurements will be compared. However, the Director may establish the reference level based on an analysis of other water-level data. The Director may require the user to obtain and report additional water levels each year if more data are needed to evaluate the aquifer system.

All measurements shall be made by a certified water rights examiner, registered professional geologist, registered professional engineer, licensed well constructor or pump installer licensed by the Construction Contractors Board. Measurements shall be submitted on forms provided by, or specified by, the Department. Measurements shall be made with equipment that is accurate to at least the standards specified in OAR 690-217-0045. The Department requires the individual performing the measurement to:

- A. Associate each measurement with an owner's well name or number and a Department well log ID; and

- B. Report water levels to at least the nearest tenth of a foot as depth-to-water below ground surface; and
- C. Specify the method of measurement; and
- D. Certify the accuracy of all measurements and calculations reported to the Department.

The water user shall discontinue use of, or reduce the rate or volume of withdrawal from, the well(s) if any of the following events occur:

- A. Annual water-level measurements reveal an average water-level decline of one or more feet per year for five consecutive years; or
- B. Annual water-level measurements reveal a water-level decline of 5 or more feet in fewer than five consecutive years; or
- C. Hydraulic interference leads to a decline of 10 or more feet in any neighboring well with senior priority.
- D. The Department Ground Water Section Staff approved static ground water level measurements at well LAKE 2424 (state observation well 381) is below 30 feet below land surface.

The period of restricted use shall continue until the water level rises above the decline level which triggered the action or the Department determines, based on the permittee's and/or the Department's data and analysis, that no action is necessary because the use is not contributing to the decline or contributing to the groundwater level being below 30 feet below land surface at well LAKE 2424 (state observation well 381) or because the aquifer in question can sustain the observed declines without adversely impacting the resource or causing substantial interference with senior water rights. The water user shall not allow excessive decline, as defined in Commission rules, to occur within the aquifer as a result of use under this permit. If more than one well is involved, the water user may submit an alternative measurement and reporting plan for review and approval by the Department.

- 6. **Dedicated Measuring Tube:** Wells with pumps shall be equipped with an unobstructed, dedicated measuring tube pursuant to figure 200-5 in OAR 690-200. For existing wells with a pump installed, installation of the measuring tube shall occur when the pump is removed or replaced and/or when the well is deepened or reconstructed or altered.
- 7. All wells shall be constructed to extract or inject groundwater from and to the same water-bearing zone within the basalt unit (this includes tuff breccia) below the basin sediments. To meet this criterion, each well shall have at minimum continuous casing and continuous seal from land surface, through the sediment to the productive portion of the basalt unit.
- 8. The location of all injection wells shall be at a distance from a point near the mouth of Hammersley Canyon that is equal to or less than the distance of the production well from the same point near the mouth of Hammersley Canyon. Otherwise, the use is **unauthorized** and subject to regulation, including possible immediate cancellation of the permit. The point location is 400 feet east of the west quarter corner of Section 3 in Township 39 South, Range 20 East, W.M.

9. [The use described in this permit](#) is authorized if and only if 100 percent of the groundwater extracted from the production well(s) is injected in the authorized injection well(s), which can be confirmed by flow-meter data. Otherwise, the use is unauthorized and subject to regulation, including possible immediate cancellation of the permit.
10. All water produced under this permit shall be injected into the authorized well(s). Prior to receiving a certificate of water right, the permit holder shall submit documentation affirming that any applicable additional requirements of the Department's Division 230 rules have been met.
11. Groundwater production shall occur from the predominantly basalt unit (this includes tuff breccia) below the predominantly basin-fill unit by casing and sealing through the basin-fill unit into the basalt unit.
12. Prior to using water from any well listed on this permit, the permittee shall ensure that the well has been assigned an OWRD Well Identification Number (Well ID tag), which shall be permanently attached to the well. The Well ID shall be used as a reference in any correspondence regarding the well, including any reports of water use, water level, or pump test data.

The water source identified in your application may be affected by an Agricultural Water Quality Management Area Plan. These plans are developed by the Oregon Department of Agriculture (ODA) with the cooperation of local landowners and other interested stakeholders, and help to ensure that current and new appropriations of water are done in a way that does not adversely harm the environment. You are encouraged to explore ODA's Water Quality Program web site at http://www.oregon.gov/ODA/NRD/water_agplans.shtml to learn more about the plans and how they may affect your proposed water use.

If you have any questions:

Feel free to call me at 503-986-0816 if you have any questions regarding the contents of this letter or your application. Please have your application number available if you call. General questions about water rights and water use permits should be directed to our customer service staff at 503-986-0801. When corresponding by mail, please use this address: Kerry Kavanagh, Oregon Water Resources Department, 725 Summer St NE Ste A, Salem OR 97301-1266. Our fax number is 503-986-0901.

Sincerely,



Kerry Kavanagh
Water Right Application Caseworker

enclosures: Application Process Description and Stop Processing Request Form

G-17512
WAB 13- no psi - 100% non-consumptive
POU 13- no psi - 100% non-consumptive
GW

APPLICATION FACT SHEET

Application File Number: G-17512

Applicant: CRYSTAL CLEAR ENERGY LLC

County: Lake

Watermaster: 12

Priority Date: December 7, 2011

Source: HAMMERSLEY WELL (LAKE 2326) IN HAMMERSLY CREEK BASIN

Use: GEO-THERMAL (HEATING & COOLING); POWER DEVELOPMENT

Quantity: 3.34 CUBIC FEET PER SECOND

Basin Name & Number: Goose & Summer Lake, #13

Stream Index Reference: Volume 1 THOMAS CR MISC

Well Locations:

PRODUCTION WELL - HAMMERSLY WELL (LAKE 2326) - SENW, SECTION 3, T39S, R20E, W.M.; 1506 FEET SOUTH AND 1631 FEET EAST FROM NW CORNER, SECTION 3

INJECTION WELL - WELL 2 - SENE, SECTION 4, T39S, R20E, W.M.; 1400 FEET SOUTH AND 80 FEET WEST FROM NE CORNER, SECTION 4

INJECTION WELL - WELL 3 - SWSW, SECTION 3, T39S, R20E, W.M.; 4545 FEET SOUTH AND 1065 FEET EAST FROM NW CORNER, SECTION 3

INJECTION WELL - WELL 4 - SENW, SECTION 10, T39S, R20E, W.M.; 1390 FEET SOUTH AND 202 FEET EAST FROM NW CORNER, SECTION 10

Place of Use:

NW $\frac{1}{4}$ NW $\frac{1}{4}$
NW $\frac{1}{4}$ SW $\frac{1}{4}$
SW $\frac{1}{4}$ SW $\frac{1}{4}$
SECTION 3

ALL OF SECTION 4

ALL OF SECTION 9
TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

Place of Use (continued):

NE $\frac{1}{4}$ NW $\frac{1}{4}$
NW $\frac{1}{4}$ NW $\frac{1}{4}$
SW $\frac{1}{4}$ NW $\frac{1}{4}$
SE $\frac{1}{4}$ NW $\frac{1}{4}$
NE $\frac{1}{4}$ SW $\frac{1}{4}$
NW $\frac{1}{4}$ SW $\frac{1}{4}$
SW $\frac{1}{4}$ SW $\frac{1}{4}$
SE $\frac{1}{4}$ SW $\frac{1}{4}$
NE $\frac{1}{4}$ SE $\frac{1}{4}$
NW $\frac{1}{4}$ SE $\frac{1}{4}$
SW $\frac{1}{4}$ SE $\frac{1}{4}$
SE $\frac{1}{4}$ SE $\frac{1}{4}$
SECTION 10

ALL OF SECTION 15

ALL OF SECTION 16

NE $\frac{1}{4}$ NE $\frac{1}{4}$
SE $\frac{1}{4}$ NE $\frac{1}{4}$
SECTION 17

NE $\frac{1}{4}$ NE $\frac{1}{4}$
SE $\frac{1}{4}$ NE $\frac{1}{4}$
NE $\frac{1}{4}$ SE $\frac{1}{4}$
SE $\frac{1}{4}$ SE $\frac{1}{4}$
SECTION 21

NW $\frac{1}{4}$ NE $\frac{1}{4}$
SW $\frac{1}{4}$ NE $\frac{1}{4}$
NE $\frac{1}{4}$ NW $\frac{1}{4}$
NW $\frac{1}{4}$ NW $\frac{1}{4}$
SW $\frac{1}{4}$ NW $\frac{1}{4}$
SE $\frac{1}{4}$ NW $\frac{1}{4}$
NE $\frac{1}{4}$ SW $\frac{1}{4}$
NW $\frac{1}{4}$ SW $\frac{1}{4}$
SW $\frac{1}{4}$ SW $\frac{1}{4}$
SE $\frac{1}{4}$ SW $\frac{1}{4}$
NW $\frac{1}{4}$ SE $\frac{1}{4}$
SW $\frac{1}{4}$ SE $\frac{1}{4}$
SECTION 22

TOWNSHIP 39 SOUTH, RANGE 20 EAST, W.M.

14 DAY STOP PROCESSING DEADLINE DATE: Friday, April 20, 2012

PUBLIC NOTICE DATE: Tuesday, April 10, 2012

30 DAY COMMENT DEADLINE DATE: Thursday, May 10, 2012

Mailing List for IR Copies

Application #G-17512

IR Date: April 6, 2012

Original mailed to applicant:

CRYSTAL CLEAR ENERGY LLC
ATTENTION: CHUCK KELLEY
220 NORTH G ST
LAKEVIEW, OR 97630

Copies sent to:

1. WRD - File # G-17512
2. WRD - Water Availability: Ken Stahr

IR, Map, and Fact Sheet Copies sent to:

3. WRD -Watermaster # 12

<p>Copies Mailed By: _____ (SUPPORT STAFF) on: _____ (DATE)</p>

Affected Landowners (include "Notice of Initial Review--Affected Landowner")

4. Snider Family Trust of March 18, 1994, c/o Jean Snider Schadler, Successor Trustee,
17783 Highway 395, Lakeview, OR 97630

Copies sent to Other Interested Persons (CWRE, Agent, Well Driller, Commenter, etc.)

5. Darryl Anderson, CWRE #5,
Anderson Engineering and Surveying Inc. PO Box 28, Lakeview OR 97630

Caseworker: Kerry Kavanagh

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